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# Social Contexts and Core Discussion Networks: Using a Choice-Constraint Approach to Study Similarity in Intimate Relationships

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*Social contexts in which confidants get to know each other affect the composition of their personal networks, inter alia the similarity among confidants. Results from analyses on a representative sample of the Dutch population between 18 and 65 years of age (SSND 2000), support the idea that differences in similarity among confidants can be explained by 1.) the social composition of a context, 2.) the extent to which interactions within a context are enforced, and 3.) the amount of time people spend in a context. Moreover, there is a certain degree of path-dependency in the use of social contexts, that leads to reinforced context effects on similarity among confidants.*

## Introduction

Since the 1980s, sociologists pay increasing attention to the supply-side perspective on the emergence of personal networks. For example, Blau (1977:79) stated that "social associations depend on opportunities for social contacts." Verbrugge (1977) abbreviated this as "there is no mating without meeting." Feld (1981) and Feld and Carter (1998) not only pointed at the explanatory weakness of demand-side assumptions, they also further developed the theory on the supply of social ties in Feld's "focus theory." And, according to Fischer (1982:179), who speaks of a choice-constraint approach, "people can select friends only from among other people available to them and that pool is shrunk tremendously by the social contexts in which people participate." The underlying argument is that whom one works and socializes with, or even the person one marries,

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is not merely an individual decision. Social relationships and networks also depend on conditions beyond the individual. The number of different persons in the social contexts in which one moves around determines the chances to meet certain types of others and thereby the types of relationships that will emerge. In other words, the socio-demographic composition of the contexts in which people live, work and socialize constitutes the opportunity structure to get to know particular others.

A major finding in studies on personal relationships is that personal networks are disproportionately homogeneous with regard to sociodemographic characteristics. According to the homophily principle, people tend to associate with people of their own kind, i.e., those with similar lifestyles and sociodemographic and socioeconomic characteristics (Laumann 1966; Lazarsfeld and Merton 1954; for an overview, see McPherson, Smith-Lovin and Cook 2001). From a psychological perspective, this tendency is explained in terms of interpersonal attraction, because having the same interests and attitudes makes association easier, more pleasant and emotionally more rewarding (see Huston and Linger 1978 for an overview). Sociological studies, however, increasingly focus on the structural sources of homophily, because the social homogeneity of most social contexts in which people meet others creates a strong baseline homophily in networks (McPherson, Smith-Lovin and Cook 2001). Huckfeldt remarked: "the available pool of socially similar individuals varies as a function of context, so that the same set of preferences might produce different friendship groups in different environments." (Huckfeldt 1983; see also McPherson and Smith-Lovin 1987) These two perspectives imply an interplay between the choices for certain types of associates and meeting opportunities. On this, Huckfeldt remarked "the militant contextualist may be in danger of ignoring the effect of individual preferences on associational patterns and friendship choice, but the focus on personal control may ignore important external constraints on supply." (Huckfeldt 1983; see also Blumstein and Kollock 1988)

In this study, we use a choice-constraint approach, stressing that personal networks are the result of individual choices made within contextual constraints (cf. Fischer et al. 1977:42). Based on three characteristics of social contexts, we hypothesize how these contexts affect similarity in personal relationships. Subsequently, we test our hypotheses using data on core discussion networks. *Core discussion networks* consist of individuals with whom people discuss important personal matters (Bailey and Marsden 1999; Burt 1984; Marsden 1987). While people can have many network members and even many friends, they do not tend to discuss important personal matters with every one of them, but only with those they really trust. We therefore use the word "confidant" to indicate these core discussion network members (cf. Marsden 1987). We show how the

social contexts people draw confidants from affect the social composition of these core discussion networks by looking at similarity between confidants with respect to age, level of education, sex and religion.<sup>1</sup> One can assume that personal preferences for similar associates are stronger when selecting the most intimate network members. This implies that revealing an effect of the context in which confidants get to know each other on social similarity in their relationships is a strong corroboration of the choice-constraint approach and the impact of contextual constraints on resulting relationships.

### **Revisiting Effects of Social Contexts on Core Discussion Networks**

The choice-constraint approach, a supply-side perspective, has been applied to various kinds of personal relationships, for example, friendships (McPherson and Smith-Lovin 1987; Verbrugge 1977), marital relationships (Blau and Schwartz 1984; Kalmijn 1998; Kalmijn and Flap 2001), sexual relationships (Laumann et al. 1994), relationships with colleagues (Flap, Bulder and Völker 1998), and relationships with neighbors (Huckfeldt 1983; Völker and Flap 1997). Moreover, Marsden (1990) provided empirical confirmation for Blau's "opportunities for contact" postulate, using it to explain the composition of Americans' core discussion networks. For other applications, see Blau, Blum and Schwartz (1982), Blum (1985), Cook and Whitmeyer (1992), Fischer et al. (1977), De Graaf and Kalmijn (2003), Kalmijn (2002), and Podolny and Baron (1997).

Although these studies present valuable findings, they have a few shortcomings which consequently provide reasons to reconsider the main arguments. First, previous empirical studies show effects of social contexts on the composition of personal networks, but give no insight into the interplay between the choice for and the opportunities to meet certain types of associates. We formulate hypotheses on this interplay, using dimensions of social contexts as described in Feld's 1981 paper, "The Focused Organization of Social Ties."

Second, the majority of previous empirical studies ignored the fact that the emergence of a subsequent network relationship is dependent on preceding relationships. For several reasons, which we discuss below, we expect that people draw subsequent network members from the same context as they had already drawn previous members. We then examine this path-dependency and its effect on the composition of core discussion networks.

Third, due to the wording of the name-generating question in the General Social Survey of 1985, it is not fully clear whether the inner core of people's personal networks was actually delineated. In the GSS, used *inter alia* in Marsden's work (Marsden 1987, 1988, 1990), respondents

were asked for names of people they discussed "important matters" with. A more valid question to measure core discussion networks is to ask for those with whom people discuss "important personal matters." This latter formulation puts even more emphasis on the inner core of those others whom one really trusts (cf. Bailey and Marsden 1999; Burt 1984). In fact, this wording was originally proposed to be used in the GSS (Burt 1984), but is used in the Survey of the Social Networks of the Dutch (see Völker and Flap 2002), which provides data for our analyses.

Fourth, we have a better measure of contexts than applied in earlier studies. Like Fischer (1982) in his examination of personal networks in Northern California, Marsden (1990) measured contexts indirectly as role relations. The underlying argument is that responses to the question on role relations, which indicate the different ways in which respondents and their network members are connected, give clues as to the contexts in which dyadic ties are formed (cf. Marsden 1990:399). In our study, we measured contexts directly, by asking people straightforwardly about the social contexts in which they got to know their network members.

### **Social Contexts Affecting Similarity in Personal Relationships**

According to Fischer (1977:42), "personal networks are the results of individual choices made within social constraints." This implies that people are able to realize their preferences for certain types of others, as long as these types of others are available. In other words, the social composition of a personal network reflects the composition of the social contexts in which an individual moves around. But next to the social composition of contexts, there are various other characteristics of social contexts that affect the emergence of personal relationships. Feld (1981) described a number of dimensions of social contexts, of which we will use the two most important in a choice-constraint approach. First, social contexts vary in the extent to which interactions are institutionally regulated or enforced. Second, they vary with regard to the amount of time one generally spends in that context. By examining how these context characteristics affect similarity between confidants who got to know each other in these contexts, we gain insight into the interplay of choice and constraints. Additionally, we examine what we call the "path-dependent use of social contexts," arguing that this reinforces the effects of social contexts on personal network composition.

#### ***Social Composition of Contexts***

The social composition of contexts can bring about similarity as well as dissimilarity in personal relationships. Many contexts are segregated

with regard to age, sex or other sociodemographic characteristics. The opportunity to get to know many similar others in these contexts provides a major explanation for why people start personal relationships with similar others (cf. Feld 1982; Fischer 1982; Kalmijn and Flap 2001; Marsden 1990). Other social contexts where people spend time, however, are considerably heterogeneous with respect to sociodemographic characteristics, making associations with similar others less likely. In these cases, the social composition of the context constrains similarity (cf. Coleman 1990; Fischer 1982; Marsden 1990; McPherson, Smith-Lovin and Brashears 2006). Hence Proposition A:

*The more homogeneous the social composition of a social context, the more similarity in core discussion relationships drawn from that context.*

This leads to the following hypotheses. First, with regard to age, one can easily get to know a similar confidant at school, because schools are especially segregated by age. Also at going-out places (like bars, pubs, nightclubs, etc.), at clubs or associations, or via friends, one can easily get to know age similars, because many going-out places<sup>2</sup> as well as clubs and associations are age-segregated (cf. McPherson and Smith-Lovin 1987), and friends of friends are likely to be of the same age. Finding age-similar confidants via family, however, is much more difficult, because (extended) families include multiple generations: parents, spouses, siblings, children and sometimes grandparents (cf. Marsden 1990; Uhlenberg and De Jong Gierveld 2004).

Second, educational similarity, obviously, can be expected among confidants who got to know each other at school. Next, due to the strong correlation between education and occupation, educational similarity is also expected for those who started interacting at the workplace. Finally, because friends of friends are likely to have the same level of education, confidants who got to know each other via a friend are – compared to those who got know each other in other social contexts – expected to be somewhat more similar in educational level.

Third, with regard to people's sex, we expect relatively more similarity among core discussion relationships drawn from the workplace (cf. Reskin 1993; Spijkerman 2000) and from clubs or associations (cf. McPherson and Smith-Lovin 1987), because these contexts are usually more segregated by sex than society as a whole.<sup>3</sup>

Fourth, religious similarity is expected to be relatively more likely for confidants who got to know each other at school because, at least in the heyday of pillarization in the Netherlands, the school system was structured according to religious background.<sup>4</sup> Next, because one's

religion is strongly determined by the religion of the family of origin, those who got to know each other via family are also likely to be similar in religion.

### *Enforced Interaction Within Contexts*

According to Feld (1981), the extent to which interactions between people in a context are institutionally regulated or enforced affects the emergence of personal relationships. Enforced interactions not only make the emergence of relationships within that context more likely, but also affect between whom a relationship will originate (see also Feld 1982; Fischer 1982). Consequently, one's freedom to select those who are most similar to oneself out of the given pool of potential associates is constrained by these enforced interactions. Thus, Proposition B is:

*The more people are forced to interact with certain others in a social context, the stronger the effects of the social composition of the social context on similarity in core discussion relationships drawn from that context.*

Related to this proposition, we formulate the following hypotheses. Within families there are often strong expectations as to whom one needs to interact with intensively, which reduces the freedom to choose the relative who is most similar to oneself. We therefore expect the age-heterogeneous composition of the family context to have a strong negative effect on age-similarity in core discussion relationships. Interactions at work are often institutionally organized, according to division of labor. Linking this to the segregated composition of many workplaces with regard to sex, and especially education, high sex- and education-similarities are expected among confidants who got to know each other at work.

The absence of rules on interactions within a context provides the opportunity to select the preferred one out of the given pool of potential associates. From the social composition perspective, no effects of getting to know each other at school or going-out places are to be expected on sex similarity, because both contexts in general consist equally of both men and women. Within these contexts, however, enforced interactions hardly exist, so that people are free to choose associates out of the pool of others provided by these contexts. Consequently, an adolescent's preference for having same-sex friends (cf. Leenders 1996) is not hindered by characteristics of the school context, nor is one's aim to get to know a potential partner of a certain sex hindered by characteristics of going-out places.



### *The Amount of Time Spent in Contexts*

Also according to Feld (1981;1982), another constraint with regard to selecting personal network members is the limited amount of time and money people can spend. Because of these limitations, people are restricted in the number of contexts they can enter. Moreover, the more time they spend in a specific context (e.g., the more hours they are at work), the less time is left to spend in other contexts, and the more likely confidants are drawn from that former context, even if they do not fully meet the preferred characteristics. Consequently, it constrains the extent to which people can decide to look for similar others in another social context in case they prefer similars, but are currently faced with a context full of dissimilar others. Proposition C is:

*The more time is spent in a social context, the more likely confidants will be drawn from that context, the stronger the effects of the social composition of the context on similarity in core discussion relationships drawn from that context.*

Hypotheses based on this proposition are as follows: In general, people spend a great share of their time at work and in the family context. It is therefore likely that people get to know confidants in these contexts. Linking this to the segregated composition of many workplaces with regard to sex, and especially education, as well as to the institutionally organized interactions at workplaces, we expect high levels of sex and educational similarity among confidants who got to know each other at

**Table 1: Hypotheses about the Effects of Social Contexts on Similarity in Personal Relationships**

Social Contexts	Similarities			
	Age	Education	Sex	Religion
Via family	–			+
School	+	+	+	+
Work		+	+	
Club/association	+		+	
Via friends	+	+		
Going-out place	+		–	

Notes:

+ means that the social context concerned has a stimulating effect on similarity

– means that the social context concerned has a constraining effect on similarity

work. Linking this to the segregated composition of families with regard to religion and the integrated composition with regard to age, we expect a high level of religious similarity and a low level of age similarity among confidants who got to know each other via family.

### *Path-dependency in the Use of Social Contexts*

Verbrugge (1979) found that people who select a kin, neighbor or coworker as a close friend repeat that criterion for other close friends. An explanation for this repetition is that "people live in limited social arenas which influence who they become acquainted with and who they see routinely in their daily rounds. These limitations should influence similarly how ego develops *all* his or her close friendships. Moreover, a chain of friendship formation may occur." (Verbrugge 1979) For this reason, we expect a certain degree of repetitive use of social contexts to get to know confidants, which we call a "path-dependent use of social contexts." That is, if people have multiple confidants, the contexts in which they get to know these different confidants are dependent on each other. After people use a particular social context from which to draw confidants, subsequent confidants are likely to be drawn from the same context because that is more convenient and makes life less complicated. The implication of this path-dependent use of social social contexts, instead of switching to another context, is that the effect of the social context one starts to draw confidants from on similarity among confidants is reinforced. In short, we formulate the following two specific hypotheses:

- 1.) The likelihood to draw confidants from a certain social context increases if the first confidant was already drawn from that context.
- 2.) Drawing subsequent confidants from the first used social contexts, instead of switching to another context, results in reinforced effects of that first context on similarity among confidants.

## **Data and Measurements**

### *The Sample*

We use data from the first wave of *The Survey of the Social Networks of the Dutch* (Völker and Flap 2002), which was conducted in 1999/2000. This dataset contains information on 1,007 individuals in the Netherlands, and is representative for the Dutch population between 18 and 65 years

of age. To collect the data, a stratified random sample was drawn from 40 of the approximate 500 Dutch municipalities, representing the various provinces and regions, while taking into account the degree of urbanization and number of residents in these municipalities. In each of the municipalities, four neighborhoods were randomly selected using the postal code system. Next, per neighborhood, 25 addresses were randomly selected. At eight of these addresses, the resident between 18 and 65 years of age who was to have a birthday first was interviewed. In the end, with a response rate of 40 percent, which nowadays is common for survey research in the Netherlands, the dataset of 1,007 respondents from 161 neighborhoods was realized.

Comparing these SSND data with national statistics on basic sociodemographic features, we find that men, married people and higher educated people are somewhat overrepresented in the dataset. In addition, people with a paid job are over-sampled. Nonetheless, we use the data on all 1,007 respondents, 1.) because Van der Gaag (2005) showed that various network characteristics do not change remarkably when using a weighted instead of an unweighted sample and 2.) because in our final analyses we control for sex, marital status, level of education and having a paid job.

## **Measurements**

### *Dependent Variables*

Respondents were interviewed about various kinds of personal relationships. Their networks were delineated through so-called “name-generating” questions, 13 in total. One of these questions read: *Life is usually not only about going out and enjoying company. Everybody needs someone to talk about important matters from time to time. With whom did you discuss important personal matters during the last six months? May I (again) have the first name and the first letter of the family name of those persons?* Respondents were allowed to name persons they had already mentioned to previous name-generating questions and could add a maximum of five new persons.<sup>5</sup> These persons became the respondent’s core discussion network.

Having collected the names of the personal contacts, additional questions (the “name-interpreters”) were asked about the contacts as well as about the relationship with them. Similarity between respondent and network member with regard to sex and religion (based on four categories: no religion, Catholic, Protestant and other religion)<sup>6</sup> was measured using dummy-coded variables. Age similarity and educational similarity (based on four categories: primary education to lower vocational education, (lower) general secondary education to pre-university education, intermediate

vocational education to higher vocational training and university degree)<sup>7</sup> were measured as the negative absolute difference of, respectively, age and level of education between respondent and network member.<sup>8</sup> Finally, we combined the four similarity measures into one measure called "overall similarity." Overall similarity indicates how many of these four characteristics the respondent and network member share.<sup>9</sup> For this, we considered respondent and network member to be similar with regard to age if their age difference was maximally five years, and considered them similar with regard to education if their level of education was the same.

### *Independent Variables*

In order to determine the social context in which individuals got to know each other, respondents were asked for every person mentioned: *Where, on what occasion, did you get to know this person?* They could choose from several contexts: at school, at a club or association, at work, via family, via friends, at my place, at their place, in the neighborhood, at a going-out place, at church, on a vacation, at a party, and somewhere else. For the analyses, we combined the contexts at my place, at their place, at church, on a vacation, at a party, and elsewhere into one category called "other contexts." Additionally, respondents were asked how long they have known each of their network members, which creates the opportunity to indicate in which social context one got to know one's first confidant. In case respondents had no single, but multiple longest core discussion relationships, we considered the first mentioned as the first confidant and the others as subsequent confidants.

### *Control Variables*

In our final analyses, we controlled for the following respondent characteristics: age, sex, marital/cohabiting status, level of education (four categories: primary education to lower vocational education, (lower) general secondary education to pre-university education, intermediate vocational education to higher vocational training and university degree), having a paid job, nationality (i.e., being a native, a first-generation immigrant, or a second-generation immigrant.), degree of urbanization of place of residence (measured as the number of people living within a 15-minute car drive of the respondent<sup>10</sup>), and religion (categories are no religion, Catholic, Protestant, and other religion).

### *Analyses*

Because of the hierarchical structure of our data, i.e., personal networks are nested "within individuals," we use multilevel techniques for the analysis.<sup>11</sup> More specifically, we use hierarchical linear modeling, which

is an extension of the general linear model in which the probability model for the errors, or residuals, has a structure reflecting the hierarchical structure of the data (Snijders 2003; Snijders and Bosker 1999). Previous research, e.g., Van Duijn, Van Busschbach and Snijders (1999) and Völker and Flap (2001), showed multilevel methods to be particularly suited for the analysis of relations in personal networks, because justice is done to the hierarchical nested structure of the data and the resulting dependence between observations “within respondents.”

Before presenting the results from these multilevel analyses, we first provide some benchmarks on size and composition of core discussion networks of the Dutch (Table 2), on similarity in core discussion relationships (Table 3), and on where these confidants got to know each other (Table 4). Next, we examined the effect of the context in which confidants got to know each other on their similarity. Table 5 presents predicted similarity levels in core discussion relationships with regard to age, level of education, sex, religious background, and a combination of these similarity characteristics called “overall similarity.” For each social context, predicted similarity levels with regard to age, level of education and overall similarity are calculated from multilevel linear regression models. With regard to sex and religion, predicted similarity levels are calculated from multilevel logistic regression models.

Table 6 provides information on the number of contexts people use to get to know their core discussion network members, and Tables 7 and 8 give insight into the path-dependent use of contexts and its consequences for similarity in core discussion relationships. More specifically, Table 7 shows the probability that one gets to know a second, third, fourth (etc.) confidant in a particular context in case one already got to know the first confidant in that context. These probabilities are calculated from multinomial logistic regression models on the context in which respondents got to know subsequent confidants (i.e., all confidants minus the first one), while the context in which they got to know the first confidant is used as an independent variable. In Table 8, we show the effect of switching to another context to get to know subsequent confidants on the association between the level of similarity between respondent and first confidant and the level of similarity in subsequent relationships. To examine this, we calculated multilevel linear regression models with similarity between respondent and subsequent confidant as dependent variable, and with similarity between respondent and first confidant, having switched to another context, and an interaction term between these two as independent variables. The interaction provides the opportunity to show the extent to which, given the level of similarity between respondent and first confidant, switching to another context to get to know a subsequent confidant results in more or less similarity in the subsequent relationship. Reported are the

Table 2: Core Discussion Network Size and Composition

	Value	%	Mean	St. dev.	(N)
Network Size	0	13.0	2.37	1.97	1,007
	1	27.3			
	2	21.5			
	3	13.2			
	4	10.7			
	5	9.4			
	6+	4.8			
Average Composition					870
	partner	22.4			
	relatives	29.8			
	friends	39.1			
	others	8.5			

Source: SSND, 1999/2000

mean similarity levels between respondent and subsequent confidants, as calculated from multilevel linear regression models for overall similarity in core discussion relationships.

Results

*Describing Core Discussion Networks in the Netherlands*

Table 2 shows basic univariate distributions of core discussion network size and composition. On average, the Dutch report having 2.4 persons with whom they recently (i.e., during the six months prior to the interview) discussed important personal matters. A sizable percentage of respondents report having no (13 percent) or only one (27 percent) confidant. Furthermore, Dutch core discussion networks, for a large part, consist of friends (39 percent), followed by relatives (30 percent), and one’s partner (22 percent).

Table 3 shows the extent to which core discussion relationships differ from fictitious random relationships among respondents, with regard to similarity in age, level of education, sex and religion. We compared the average difference between respondents and their matching confidants, with the average difference between respondents in our sample. Assuming that our sample is representative of the whole population, it gives an indication of whether there is more similarity in intimate personal relationships than between arbitrary people in society. Overall, it turns out that there is indeed more similarity in core discussion relationships than among the sample of respondents themselves with regard to age, level

Table 3: Similarity in Core Discussion Relationships

Variable	%	Mean	St. dev.	(N)
<b>Age Similarity<sup>a</sup></b>				
between respondent and confidants				
0-1 year difference	17.7	-9.23	9.95	2,373
2-5 years difference	36.4			
6-10 years difference	16.7			
> 10 years difference	29.0			
between randomly chosen respondents		-12.84		1,007
<b>Education Similarity<sup>b</sup></b>				
between respondent and confidants				
no difference	47.5	-.71	.77	2,347
1 level difference	35.7			
2 levels difference	15.4			
3 levels difference	1.3			
between randomly chosen respondents		-1.02		1,007
<b>Sex Similarity</b>				
between respondent and confidants		.61	.49	2,390
between randomly chosen respondents		.51		1,007
<b>Religion Similarity<sup>c</sup></b>				
between respondent and confidants		.56	.50	2,222
between randomly chosen respondents		.60		999

Source: SSND, 1999/2000.

<sup>a</sup>Age similarity is measured as the negative absolute age difference between respondent and confidant (respectively, between two randomly chosen respondents).

<sup>b</sup>Educational similarity is measured as the negative absolute difference between respondent and confidant (respectively, between two randomly chosen respondents) in highest level of education completed. Based on variables on level of education with categories primary education to lower vocational education, (lower) general secondary education to pre-university education, intermediate vocational education to higher vocational training, university degree.

<sup>c</sup>Respondents are considered religious if they go to church at least once a year. For both respondents and confidants, religion categories are (0) no religion, (1) Catholic, (2) Protestant, and (3) other religion.

of education and sex. Specifically, 1.) whereas the average age difference between two randomly chosen respondents is 12.8 years, confidants on average differ from the concerned respondent by 9.2 years; 2.) whereas two randomly chosen respondents differ by an average of 1.0 level of education, the mean educational difference between respondent and confidant is .7 level;<sup>12</sup> and 3.) on average, one's core discussion network consists of 61 percent same-sex relationships, whereas sex similarity

among respondents is 51 percent. Considering that 22 percent of all core discussion network members are partners (Table 2), this last finding indicates that many remaining confidants are of the same sex. With respect to religious background, however, we find somewhat less similarity in core discussion relationships than among respondents (respectively, 56 and 60 percent on average).

Table 4 provides insight into the extent to which various social contexts contribute to people's core discussion networks. It turns out that the Dutch, on average, get to know one of four confidants in the family context. Workplaces are the second most important supplier of confidants; almost 15 percent got to know each other there. Clubs, schools and neighborhoods are more or less equally important: between 8 and 10 percent of all confidants got to know each other in each of these contexts. Finally, it turns out that people find few core discussion network members at going-out places and via friends.

### *The Effects of Social Contexts on Similarity in Core Discussion Relationships*

In Table 5 we show the extent to which the social context in which confidants got to know each other affects their similarity, by presenting predicted similarity levels in core discussion relationships for a number of social contexts.<sup>13</sup> Whether confidants who got to know each other in a certain social context are significantly more (or less) similar to each other than confidants who got to know each other in one of the other contexts, can be determined by comparing the similarity levels for these specific social contexts among themselves. The first column shows that age similarity among confidants in particular is affected by the social context in which they got to know each other. As hypothesized, those who got to know each other at school, at a going-out place, at a club or association and via friends are generally most similar in age. Whereas the mean age difference between confidants is about nine years, those who got to know each other in these contexts are on average between three and six years different in age. The family is clearly the context that supplies confidants most dissimilar in age. The average age difference between confidants who got to know each other via family is almost 16 years.

The second column shows the effects of social contexts on similarity in education. As expected, at school and at work, people got to know confidants who are most similar to themselves in level of education. Whereas the mean educational difference between confidants is .70 levels (based on four categories), those who got to know each other at school or at work on average differ only .43, respectively .51 levels of education. Other social contexts have no significant effect on educational similarity in core discussion relationships. A positive effect of getting to



**Table 4: Social Contexts in Which People Get to Know Core Discussion Network Members**

<b>Variables</b>	<b>%</b>	<b>N</b>
Neighborhood	8.3	197
Via family	22.8	542
School	9.2	218
Work	14.5	345
Club/ association	9.8	233
Via friends	6.0	142
Going-out place	6.3	150
Other <sup>a</sup>	23.1	548
<b>Total</b>	<b>100.0</b>	<b>2,375</b>

<sup>a</sup>That is, at my place, at their place, at church, on a vacation, at a party or elsewhere.  
Source: SSND, 1999/2000.

know each other via friends on educational similarity, as we hypothesized, was not found.

The third column shows the effects of social contexts on sex similarity in core discussion relationships. In contrast to our hypotheses, it turns out that sex similarity among confidants is not more likely in case they got to know each other at work or at a club or association than in case they got to know each other in one of the other social contexts. In accordance with our hypotheses, we find that sex similarity is relatively more likely when confidants got to know each other at school, and most unlikely when they got to know each other at a going-out place. Whereas the probability of sex similarity in core discussion relationships on average is .61, it is .78 if they got to know each other at school and .30 if they got to know each other at a going-out place. The positive association between knowing each other from school and sex similarity indicates that an adolescent's preference for having same-sex friends is not hindered by characteristics of the school context, and is in line with other research findings on friendships from school (e.g., Leenders 1996). The substantial negative association between knowing each other from a going-out place and sex similarity indicates that people are not hindered in their aim to get to know a potential partner at a going-out place. And indeed, this effect is mainly due to the fact that a large share of confidants who got to know each other in this context became the partner of the respondent concerned.<sup>14</sup> In addition, although we did not have specific hypotheses about neighborhood effects, we do find a positive association between neighborhood and sex similarity. This might have two explanations: 1.) the absence of rules with regard to frequent interactions between neighbors,

and 2.) differences in sex composition of neighborhoods at different moments during the day, such that, for example, unemployed women mainly meet other women in their neighborhood (cf. Marsden 1990).

The fourth column shows that social contexts hardly affect religious similarity among confidants. Only those who got to know each other in the neighborhood are relatively the least likely to have the same religious background: Whereas the probability of religious similarity between confidants on average is .56, it is .45 if they got to know each other in the neighborhood. No further effects of social context on religious similarity are found, and also the likelihood-ratio test indicates that adding social contexts does not significantly improve the model. This means that none of our hypotheses with regard to religious similarity is confirmed. However, because we controlled for the respondent's religion in these analyses, we can notice that one's religion actually predicts religious similarity between confidants to a greater extent than does social context. Catholics, especially, but Protestants too, discuss important personal matters with co-religionists, almost irrespective of social context.

By combining the four similarity dimensions into one overall similarity measure, Table 5's last column shows that of all examined social contexts, schools clearly provide the most similar confidants. On average, confidants who got to know each other at school are similar with regard to three out of four dimensions. Most dissimilar are confidants who got to know each other via family; on average, they are not even similar on two out of four dimensions.

### *Path-dependent Use of Social Contexts*

As final step, we answer the question whether, due to a path-dependent use of social contexts, characteristics of the social context one starts drawing confidants from, even more prevalently affect the social composition of the resulting core discussion network. To that end, we examined whether getting to know a confidant in a particular context results in an increased likelihood to draw subsequent confidants from the same context. First, Table 6 shows the extent to which people get to know their confidants in different contexts. It turns out that most people, given that they have more than one confidant, have drawn these confidants from at least two different social contexts. However, drawing multiple confidants from one context is far from unusual: 37 percent of those who have two confidants got to know them in the same context, and 64 percent of those who have three confidants got to know at least two of their confidants in the same contexts.

Second, Table 7 provides insight into the actual path-dependent use of social contexts by respondents to get to know their confidants. We

Table 5: Predicted Similarity Levels in Core Discussion Relationships<sup>a</sup>

Social Context	Similarities <sup>b</sup>				Overall (N = 2,172)
	Age (N = 2,353)	Education (N = 2,327)	Sex (N = 2,361)	Religion (N = 2,204)	
Neighborhood	-6.29 (1.19)	-.78 (.13)	.77 (.03)	.45 (.16)	2.22 (.15)
Via family	-15.96 (1.17)	-.79 (.14)	.61 (.05)	.54 (.15)	1.88 (.16)
School	-2.97 (.96)	-.43 (.12)	.78 (.03)	.61 (.11)	2.96 (.12)
Work	-7.06 (.94)	-.51 (.13)	.63 (.04)	.54 (.13)	2.27 (.14)
Club/ association	-5.88 (1.11)	-.70 (.14)	.62 (.05)	.58 (.12)	2.28 (.15)
Via friends	-4.85 (1.03)	-.64 (.12)	.55 (.05)	.60 (.11)	2.30 (.13)
Going-out place	-3.59 (1.00)	-.72 (.13)	.30 (.04)	.58 (.14)	2.10 (.16)
	-11.27 (1.01)	-.81 (.13)	.58 (.05)	.58 (.14)	2.01 (.15)
Other <sup>c</sup>					
Average	-9.17 (4.66)	-.70 (.18)	.61 (.12)	.56 (.14)	2.17 (.33)
Model improvement by adding social contexts (LR Chi <sup>2</sup> )	518.73 ***	53.37 ***	112.72 ***	11.05	180.60 ***

Source: SSND, 1999/2000.

Standard deviations in parentheses.

<sup>a</sup>Calculated from multilevel linear regression models for age similarity, educational similarity, and overall similarity in core discussion relationships, and calculated from multilevel logistic regression models for similarity with regard to sex and religion. In each model we controlled for the effects of respondent's age, sex, level of education, marital status, having a paid job, nationality, degree of urbanization in place of residence, and religious background.

<sup>b</sup>Age similarity and educational similarity are both measured as the negative absolute difference between respondent and confidant. Sex similarity and religious similarity are both dummy-coded variables, such that similarity levels report the probability of a positive outcome assuming that the random effect is zero. Overall similarity is measured as the number of dimensions on which respondent and confidant are similar. For more detailed information, see the section about measurements.

<sup>c</sup>Other contexts are at my place, at their place, at church, on a vacation, at a party, and elsewhere.

**Table 6: Number of Contexts People Use to Get to Know Core Discussion Network Members (in Percentages)**

Network Size	Number of Contexts						(N)
	1	2	3	4	5	6	
1	100.0						(275)
2	37.0	62.9					(216)
3	15.9	48.4	35.6				(132)
4	3.7	49.5	41.1	5.6			(107)
5	2.1	18.9	52.6	23.1	3.1		(95)
6+	.0	12.5	25.0	45.8	14.5	2.0	(48)

Source: SSND, 1999/2000.

Pearson's correlation between core discussion network size and number of contexts used = .81 (if number of contexts > 1 : .69 / if number of contexts > 2 : .56)

estimated a multinomial logit model on the social contexts in which respondents got to know their subsequent confidant (i.e., their second, third and following confidants). Using the context where they got to know their first confidant (i.e., the confidant with whom one has the longest relationship) as an independent variable in the analysis, we predicted the effect of that context on the likelihood that they got to know subsequent confidants in the same context. Based on this model, Table 7 then presents for each context the estimated probability that people got to know subsequent confidants in the same context as their first confidant. In general, the likelihood that core discussion network members got to know each other in a particular context substantially increases if the first member was drawn from that particular context. Between contexts there are, however, differences in these effects. Knowing the first confidant via a friend, for example, increases the probability that one got to know a subsequent confidant via a friend with about 7 percent (from .06 to .13). Knowing the first confidant via family increases the probability that one gets to know a subsequent confidant via family to 29 percent. And, knowing the first confidant from work or from a club or association even increases the probability that one got to know a subsequent confidant in the same context to almost 40 percent.

Finally, Table 8 shows the effect of context switching on similarity in core discussion relationships. The presented similarity levels are calculated from multilevel linear regression models where similarity between respondent and the subsequent confidant is the dependent variable, and similarity between respondent and first confidant, switching to another context to get to know this subsequent confidant, and an interaction term between these two variables, are independent variables. Figures in the

**Table 7: Path-dependency in the Use of Social Contexts**

<b>Social Context</b>	Probability that a subsequent confidant is drawn from a social context	
	... in case the first confidant was <i>not</i> drawn from that context	... in case the first confidant was drawn from that context
Neighborhood	.09 (.03)	.32 (.09)
Via family	.11 (.06)	.29 (.09)
School	.06 (.06)	.18 (.11)
Work	.17 (.07)	.38 (.12)
Club/ association	.11 (.04)	.39 (.07)
Via friends	.06 (.04)	.13 (.05)
Going-out place	.05 (.03)	.19 (.08)
Other <sup>b</sup>	.18 (.08)	.37 (.08)

Source: SSND, 1999/2000. N = 1,632 relationships.

Standard deviations in parentheses.

<sup>a</sup>In each model we controlled for the effects of respondent's age, sex, level of education, marital status, having a paid job, nationality, degree of urbanization in place of residence, and religious background.

<sup>b</sup>Other contexts are at my place, at their place, at church, on a vacation, at a party, and elsewhere.

table then show the level of similarity (indicating on how many of the personal characteristics age, education, sex and religion, respondents and confidants are similar) in subsequent core discussion relationships in case one did, respectively did not, switch to another context to get to know the subsequent confidant. Switching to another context, on average, results in finding a somewhat more similar subsequent confidant. This effect of switching, however, is dependent on the level of similarity in the first core discussion relationship. Switching does naturally not result in more similarity in subsequent relationships in case the first confidant is similar to the concerned respondent on all four dimensions, but if one's confidant is not similar on all four dimensions simultaneously, switching results in more similarity in subsequent relationships.

## Discussion

Comparing core discussion network size of the Dutch with those of the Americans (see Marsden 1987), it seems that Dutch people, on average, have fewer confidants (2.4 on average) than Americans, who report having three core discussion network members. Furthermore, among the Dutch, there are more people who have none or just one confidant (13 and 27 percent for the Dutch, respectively, compared to 9 and 15 percent for the Americans). One reason for these differences could be the difference

Table 8: The Effect of Context Switching on Similarity in Core Discussion Relationships<sup>a</sup>

Level of similarity between respondent and first confidant	Level of similarity in subsequent core discussion relationships <sup>b</sup> ...	
	in case one <i>did not</i> switch to another context to get to know this contact	in case one <i>did</i> switch to another context to get to know this contact
0	1.43 (.20)	2.13 (.21)
1	1.79 (.21)	2.21 (.20)
2	2.02 (.23)	2.30 (.22)
3	2.39 (.21)	2.42 (.22)
4	2.75 (.19)	2.61 (.20)
Average	2.07 (.40)	2.32 (.25)

Source: SSND, 1999/2000. N = 1,343 relationships.

<sup>a</sup>Level of similarity between respondent and first confidant is measured as the number of dimensions on which respondent and confidant are similar. For more detailed information, see the section about measurements.

<sup>b</sup>Predicted mean similarity levels are calculated from multilevel linear regression models for similarity in subsequent core discussion relationships, controlling for the effects of respondent's age, sex, level of education, marital status, having a paid job, nationality, degree of urbanization in place of residence, and religious background. Predicted mean similarity levels, with standard deviations in parentheses.

between the formulations of the name-generating questions used in the surveys. As we mentioned, Marsden (1987) used data from the General Social Survey 1985, which asked for those with whom the respondent discussed *important matters*, whereas we asked our respondents for names of people with whom they discussed *important personal matters*. This emphasis on the inner core of those others whom one really trusts (cf. Burt 1984) can result in smaller delineated networks. A second reason for the difference could lie in the fact that, unlike the GSS 1985, our question regarding "discussing important personal matters" was just one of a number of name-generating questions in the survey. A third explanation might be related to cultural differences between Americans and the Dutch, rather than in the way of measuring core relationships. Perhaps forming intimate relationships is easier for Americans or perhaps Americans enjoy discussing important (personal) matters more than Dutch people do. A fourth reason could be that the GSS data which Marsden used, were collected 15 years before we collected ours. McPherson, Smith-Lovin and Brashears (2006) repeated Marsden's 1987 analyses using data from the 2004 GSS and found that Americans' core discussion network sizes had declined substantially in 19 years: The mean network size had decreased from 2.9 in 1985 to 2.1 in 2004. Because the average Dutch core discussion network size of 2.4 persons in 2000 is between these two

network sizes for the Americans, the same process of network size decline might be taking place in the Netherlands. We collected a second wave of our dataset in 2006/2007, so in the future, we will be able to answer the question on a (further) decline in core discussion network size in the Netherlands after 2000.

Next, comparing our results with regard to the effects of social contexts on similarity in core discussion relationships with results previously presented by others, we encounter a number of noteworthy differences. Marsden (1990), for example, found a positive effect of the proportion of kin on the proportion cross-sex ties within core discussion networks. In contrast, we found no effect of getting to know each other via family on sex similarity, but we did find a positive association between getting to know each other at school or in the neighborhood and sex similarity, as well as a negative association between getting to know each other at a going-out place and sex similarity. Another example is given by Kalmijn and Flap (2001), who linked marriage choices in the Netherlands to the type of setting couples had in common before they married. Whereas with regard to educational similarity in marital relationships they only found a positive effect of having attended the same school, our study shows that for core discussion relationships, next to getting to know each other at school, getting to know each other at work or via a friend also makes educational similarity more likely. Also, whereas Kalmijn and Flap (2001) found a negative effect on religious similarity of having shared the same workplace and a positive effect of having shared the same neighborhood, the same school, and when parents or siblings of the spouses knew each other, we only found that getting to know each other in the neighborhood makes religious similarity between confidants somewhat less likely.

All of these studies support the argument that the social composition of the contexts in which people move around affects the social composition of their personal networks. However, differences between Marsden's (1990) and our results indicate that it is important to look closely at how we measure things, because results may be affected by using different personal network delineation methods and the way of measuring contexts. With respect to the way of measuring of contexts, we note that the effects of the social composition of contexts on the social composition of personal networks could be better determined if the actual social composition of these contexts was also measured, instead of simply making assumptions about them. Furthermore, differences between our results and those of Kalmijn and Flap (2001) indicate the need to be cautious in generalizing the effects found with respect to one type of relationship to other types of relationships. Despite the fact that one's marriage partner is likely to be part of one's core discussion network, the differences indicate that the effects of social context on similarity in relationships are different

for marriage relationships than for core discussion relationships in general (for an overview of differences in similarity between various types of relationships, see McPherson, Smith-Lovin and Cook 2001). A related intriguing question is the extent to which the effects of the (social composition of the) contexts in which network members get to know each other are different for different types of relationships. These effects are presumably stronger for weak relationships than for strong relationships, because preferences might weigh less heavily in the choice of with whom to have a casual talk than in decisions on confidants for discussing important personal matters.

## Conclusions

This study shows that the Dutch, on average, report having 2.4 persons with whom they recently discussed important personal matters. Surprisingly many respondents had no confidant or only one (13, respectively 27 percent). We also showed that, in accordance with previous research, one's confidants are generally more likely to be similar to oneself in age, level of education and sex than are randomly chosen other people (see e.g., Louch 2000; Marsden 1987, 1988; McPherson, Smith-Lovin and Brashears 2006; Verbrugge 1977). Next, by showing that similarity in core discussion relationships, which are typically intimate, is associated with the social context in which people find each other, we have a strong case for the choice-constraint approach to study personal networks: the composition of personal networks reflects the set of people to whom one has access.

Two main contributions can be assigned to this study. First, we examined the interplay between choice and constraint effects, by focusing on how three characteristics of social contexts in which people get to know their core discussion network members affect similarity in these intimate personal relationships. Based on 1.) the specific social composition of a context, 2.) whether interactions with specific others in a context are enforced, and 3.) the amount of time people generally spend in a context, we hypothesized how various social contexts affect similarity in core discussion relationships. We conclude that age similarity between confidants who got to know each other at school, at going-out places, at clubs or associations, and via friends, age dissimilarity between confidants who got to know each other via family, but also educational similarity between confidants who got to know each other at school or at work, can all be explained by the social composition of these contexts (in accordance with proposition A, i.e., that homogeneous context composition entails more similarity in core discussion networks). A context full of similar others makes it easy to get to know a similar confidant, whereas a context with many dissimilars



makes a relationship with a dissimilar more likely. An additional explanation for the positive association between getting to know each other at work and educational similarity, is that interactions with colleagues are often institutionally organized (in accordance with proposition B, i.e., that *forced* interactions in contexts entail more effects of context composition on core discussion networks), as well as that people generally spend much time at work (in accordance with proposition C, i.e., the more time is spent in a certain context, the more likely confidants will be drawn from that context, and hence the stronger the effects of social composition), which both make meeting and mating similar educated associates likely. Another explanation for the strong negative association between getting to know each other via family and age similarity is that within families there are often (strong) regulations or expectations with respect to with whom one has to interact most, which restricts one's freedom to choose the most similar out of the given pool of others as provided by the family context (in accordance with proposition B). Finally, the findings that confidants who got to know each other at school and in the neighborhood are most likely to be same-sex, and that confidants who got to know each other at a going-out place are likely to be of the opposite sex, can be explained by the fact that these contexts have no strong regulations or expectations with respect to with whom one needs to interact. This lack of regulations and expectations, combined with the sex-integrated composition of these contexts, leaves room for people to select same-sex confidants at school and in the neighborhood and opposite-sex confidants (mostly partners) at going-out places (in accordance with propositions A and B). In short, this means that the social composition of the context one draws confidants from affects the social composition of the resulting network, but particularly if the context takes much of a person's time and if interactions within the context are institutionally regulated or enforced. Furthermore, we show that in case the social composition of the context does not constrain one's preference for associating with a similar or dissimilar other, and regulations with regard to with whom one has to interact are absent, people can actually realize their preferences to a greater extent.

Second, we show how another important constraint on network member selection affects similarity in relationships. In case an individual has multiple confidants, which is the case for about 60 percent of the population, the context from which a subsequent confidant is drawn is dependent on the context from which one drew the first confidant; The likelihood that one gets to know a subsequent confidant in a particular context is substantially greater if the first confidant was drawn from the same context (in accordance with Hypothesis 1.). However, in order to end up with more similarity in the network, one is generally better off after switching to another social context instead of drawing subsequent

confidants from the first used context (in accordance with Hypothesis 2). Assuming that high levels of similarity in personal networks are preferred, this path-dependent use of social contexts is an additional constraint with regard to personal network composition. This path-dependency implies that the composition of an individual's personal network is affected by the social composition of the social contexts from which one draws associates, and that especially the context in which one gets to know the first network member plays an important role for network composition.

## Notes

1. We examined similarity of these four characteristics, because previous research has shown that sex, age, religion and education strongly structure one's personal network. Ethnicity (or race) creates another strong division in this sense, but unfortunately, we have no data on the ethnicity of people's personal network members. Other similarity measures (e.g., with respect to people's values) have often proved to be derivatives of social positions themselves (cf. McPherson, Smith-Lovin and Cook 2001).
2. We use the term "going-out places" throughout the article to refer to bars, cafes, eating places, pubs, nightclubs, but also cultural places such as cinemas and concert or theatre halls. For the argument, one actually wants to have information on the age composition of going-out places in The Netherlands. While having no information on that composition, we inquired into general population statistics on going-out behavior (Statistics Netherlands, [www.statline.nl](http://www.statline.nl)). For example, older age groups in general visit these places much less frequently than younger ones: while 37 percent of the age group of 15-24 years visit a pub about once a week, this percentage is 13 for the age group 25-44 and drops to 7 for the age group 45-64.
3. We have no direct information on the composition of different voluntary organizations, yet we do have information on who visits what kind of organization. We inquired into representative data ( $n =$  about 13,000) on the Dutch population with regard to the composition of associations (AVO1999, Amenities and services utilization survey, SCP Steinmetz Archive, p1513). In these data, it has been inquired into membership in 10 different voluntary organizations (ranging from political parties, PTAs, sports clubs, to cultural associations). In addition, one question was asked on "any other" organization the respondent is a member of. Analyses show that many organizations are segregated with regard to sex. Odds ratios for women being a member vary between 4.4 for organizations related to women's rights and .52 for membership in a Union or a professional association (the latter is calculated for working women).
4. Straightforwardly, a church is the prototypical example of a context that is expected to provide associates who are similar as regards religious background. In our data, however, the number of core discussion network members who got to know each other at church is too small to represent a category on its own. This is presumably due to the low number of regular

churchgoers in the Netherlands in 2000. Therefore, those who got to know each other at church form part of the category "other contexts."

5. Since respondents were allowed to mention five additional network members, we assume that the number of core discussion relationships is not truncated. In addition, as we show in Table 2, not even 10 percent of all respondents mentioned five confidants.
6. Respondents are considered religious if they reported going to church at least once a year, and network members if the respondent concerned knew about his/her religion. We think these measures are comparable, since going to church at least once per year as well as knowing about the religion of the network member both imply that they are not only registered, but that religion has a meaning in their lives.
7. Using this similarity measure, we might suffer from what is sometimes called "floor and ceiling effects." With respect to age similarity, however, we think this is hardly the case, since respondents are between ages 18 and 65. With respect to educational similarity, it is true that people with a university degree only have the opportunity to choose associates with the same or a lower level of education, whereas the reverse holds true for people in the lowest educational category. To a certain extent, however, we control for these floor and ceiling effects by including age and level of education of the respondent as independent variables in the analyses.
8. We take the *negative* absolute difference, since the absolute difference would indicate dissimilarity between respondent and confidant.
9. Because the number of categories that are used to measure education similarity and the range of age differences that is used to measure age similarity both affect the likelihood that respondent and confidant are indicated as similar in these respects, we also constructed another measure of overall similarity by summing z-scores of the four similarity variables. Models in which we used this measure provided results that were very well comparable to those presented in this contribution. To simplify the interpretation of results, we therefore present results that are based on the unstandardized measures.
10. Calculations by M. van Ham (Department of Geography, Utrecht University; see Van Ham 2002). Data are from Statistics Netherlands, [www.cbs.nl](http://www.cbs.nl).
11. We used the statistical software package STATA®, release 9.
12. Keep in mind that educational similarity is measured as the negative absolute difference between respondent and confidant with respect to their highest level of education completed, based on variables with four categories: primary education to lower vocational education, (lower) general secondary education to pre-university education, intermediate vocational education to higher vocational training, university degree.
13. See the sections about measurements and analyses for important remarks with respect to these analyses.

14. Analyses not presented here show that 96 out of 150 confidants who got to know each other at a going-out place are the partner of the respondent concerned.

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